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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/461,211 | 12/15/1999 | Hiroyasu Koizumi | 018889/0156 | 3525 |

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RICHARD L SCHWAAB
FOLEY & LARDNER
WASHINGTON HARBOUR
3000 K STREET NW SUITE 500
WASHINGTON, DC 200075109

EXAMINER

FORD, JOHN K

ART UNIT PAPER NUMBER

3753

DATE MAILED: 08/05/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/461,211

Applicant(s)

Koizumi et al.

Examiner

John K. Ford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/3/04 (request for RCE)
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-22 is/are pending in the application.
- 4a) Of the above claim(s) 9, 12, 4, 14, 20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 4, 11, 13, 15, 18, 21, 22 is/are allowed.
- 6) ☒ Claim(s) 5-8, 10, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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Please note that this application has been reassigned to another Examiner.

Applicant's remarks in the amendment of January 9, 2004 have been carefully considered. They are convincing as to claims 1,2,4,11,13,15,18,21 and 22 and those claims are allowed.

If of concern however that JP 3-87063 cited by applicant's has not been translated or explained on the record.

Claims 5-8, 10, 16 and 17 are not however allowable. As illustrated by newly cited art, it is well known to extend the air-side fins considerably outboard of the tubes (and side plates) in certain instances.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear from reading claims 7 and 10 together where these "notches" are and how they are oriented, relative to the "insertion section" and "reinforcement section". Claim 10 is objected to below as being allowable but for the fact that the nature and disposition of these notches remains unclear (i.e. if the 112 second paragraph rejection is overcome claim 10 rewritten in independent form would be allowable).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 7, 8, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings anyone of JP 5-248783 or JP 4-244596 or Iokawa or Matsuura (USP 5,535,819) and anyone of Hiramatsu (USP 4,332,293), JP 9-113153 or Nagasaka et al. (USP 5,197,538).

JP 5-248783 discloses C-shaped supports 22, 23 with widths the same as the tubes and fins. The partial translation of JP 4-244596 provided by applicant is incorporated here by reference by way of explanation. Iokawa Fig. 7 and Matsuura Fig. 20 have been explained many times in this prosecution both by the Examiner and counsel and those explanations are incorporated here by reference. Without repeating everything said, each of these four references (JP 5-248783 or JP 4-244596 or Iokawa or Matsuura) clearly show a side plate, fin and tube, all substantially the same width. As admitted in applicant's response of January 9, 2004, page 11, first paragraph, the side plate 6 " has a substantially constant width [and] has the same width as that of the fins 3", in Matsuura.

To have made the fins 14b of JP '783 or the fins of Matsuura or Iokawa or JP'596 larger in width such that they extended beyond the tubes have been obvious in view of any one of the teachings of Hiramatsu '293 (wherein the fins are 12-23 mm wide versus the tubes which are only 13-16mm wide), JP '153, Figure 4 (note Figure 5 shows fins the width of the tubes as in Matsuura) or Nagasaka Figure 3. Such a modification would advantageously increase heat exchanger by virtue of more fin surface area. The fact that there will be some stagnation of airflow at the leading and trailing edges does

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not, in and of itself, teach away from making this modification in the Examiner's view of what one of ordinary skill in the art would consider to be obvious modifications. It is submitted the increased surface area, particularly at low Reynolds numbers (i.e. low fluid velocities), will outweigh the stagnation effects.

The use of multiple references, as are relied upon above, to teach the notoriety of a particular feature, is endorsed by *In re Gorman* 18 USPQ2d 1885 (Fed. Cir. 1991) and *In re GPAC* 35 USPQ2d 1116 (Fed. Cir. 1995).

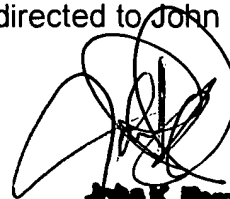
Regarding claim 6, this has been shown in the references to JP'783, Iokawa or Matsuura or admitted to by applicants in regard to their discussions of Iokawa or Matsuura.

Regarding claim 7, the notches are clearly shown at the intersection of the flat insertion section and the C-shaped reinforcement section in each of JP'783 Iokawa and Matsuura. Admittedly these are not the notches 17c applicants have disclosed however they are "notches" satisfying the limitations of the claims nonetheless. Regarding claim 8, JP 4-244596 clearly teaches this at 13a. Regarding claim 16, this is known in the prior art in Fig.7 of Iokawa et al. (see col. 1, lines 66-67) and even though it may cause alignment errors, it is still prior art that the public has earned a right to use. As such it is advantageous construction if for no other reason than to avoid potential infringement. Regarding claim 17, Iokawa does not give dimensions for the over-sizing but it must be very small. Absent any showing of non-obviousness the selection of over-sizing of small amounts (about 0.2 to 0.4mm) would have been obvious as too large an over-sizing would only exacerbate the alignment problems discussed by Iokawa et al.

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Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication should be directed to John Ford at telephone number 703-308-2636.



John K. Ford
Primary Examiner

Ford/DI

June 29, 2004